

AIRCRAFT LEADING EDGE DEVICE SYSTEMS AND CORRESPONDING SIZING METHODS

ABSTRACT OF THE DISCLOSURE

Aircraft leading edge device systems and methods for sizing such systems are disclosed. In one embodiment, a spanwise lift coefficient distribution for an airfoil corresponding to at least one design condition and at least one aircraft angle of attack is identified, and a leading edge device chord length is sized to at least approximately achieve the selected spanwise lift coefficient distribution. In another embodiment, a spanwise distribution of aircraft angles of attack corresponding to local maximum lift coefficients for an airfoil operated at a design condition is identified, and a leading edge device chord length at each of a plurality of spanwise locations is sized to achieve the distribution of aircraft angles of attack corresponding to local maximum lift coefficients. In yet another embodiment, a leading edge device chord length is tapered in two, at least approximately opposite, spanwise directions.